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**Art Learning in the Home: A Survey of Households in Austin, Texas**

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**Art Learning in the Home: A Survey of Households in Austin, Texas**

**by**

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**Thesis**

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## **Dedication**

This thesis could not have been written without the encouragement of my husband, Bryan, and my parents, Vicki and Stephen. You all have supported my efforts in many ways, for that, I am incredibly grateful. I dedicate this to you three, with love.

## **Acknowledgements**

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December 4, 2009

## **Abstract**

### **Art Learning in the Home: A Survey of Households in Austin, Texas**

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The University of Texas at Austin, 2009

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The purpose of this study was to determine how much art activity is taking place within households in Austin, Texas. By way of a questionnaire, the parents or guardians of children attending schools within the Austin Independent School District were surveyed regarding art activity within their homes.

The objective of this investigation was to provide answers to questions such as: In what ways do children participate in art making within the context of the family household? To what extent does it appear a parent's/guardian's level of schooling, number of children in the family, and amount of electronic entertainment available to the child correspond with the amount of art activity that takes place in the household?

Professional and personal motivations led to this investigation. There is an ever increasing amount of electronic entertainment available to children. Has this recent

growth of technology had an effect on the amount of time children spend with art activities in the home? Through my own experiences growing up, and through conversations with others, it was brought to my attention that the number of children residing in a household might have an effect on the amount of art activities taking place within the home, as well as the parent's or guardian's level of education.

Through the data collected by this investigation, I was able to reach a conclusion regarding the relationship found between the amount of art activities taking place in the households surveyed and the three variables studied in this investigation: (a) the parent's education, (b) the amount of electronic entertainment available to the children in the home, (c) the number of children residing in the home.

Support from the data indicated a significant pattern representing that the parent's/guardian's education is related to the amount of art activity taking place within the household. However, there was no pattern found regarding the variable of electronic entertainment devices found in a home and the amount of art making within that home. There was also a significant relationship found regarding the numbers of children residing in the household, and the amount of art activity those children are engaged in. The data collected indicated that a household in which fewer children reside is more likely to participate in more art activities.

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# **ART LEARNING IN THE HOME: A SURVEY RESEARCH**

## **Chapter 1: Introduction to the Study: Overview of the Study**

Creative activity plays a key role in a child's development. This study was undertaken to reveal the types of art activity taking place in the homes of children in Austin, Texas. It also gives an indication of how often these art activities are being done within these households. With the overbearing amount of technology available to children, it has been found that more children, in their spare time, are turning to video games rather than drawing pads. This study helps to determine whether this significant recent growth of technology has affected the amount of time children spend with art activities in the home.

There are several additional factors that took on a major role in this research. These include information such as the number of children in the household and the level of education of the parents or guardians of these children. Through this study I gained a sense of which art learning activities are most common among families in Austin, Texas, and what factors are present or lacking in the households that participate in more art activities than others.

### **CENTRAL RESEARCH QUESTION**

The following questions directed this research:

Given the increasing number of entertainment and recreation options available to children in the United States today, in what ways do children participate in art making

within the context of the family household? To what extent does it appear a parent's/guardian's level of schooling, number of children in the family, and amount of electronic entertainment available to the child correspond with the amount of art activities that take place in the household?

### **IDENTIFICATION OF PROBLEM**

My goal in answering the stated questions was to help art educators secure more complete information about what art learning experiences children have outside of school or other educational programs. Also, by answering my central research question, art educators can become knowledgeable about the specific art activities children engage in, and how often the children partake in these art based activities. Imagination and self expression are significant in a child's development. By bringing the issue of technological entertainment taking the place of art activities to the surface, art educators can discover ways that art activities may occur in the home. Moreover, if art educators are aware of the kinds of art activities students engage in outside of school, they can then relate these common activities to their art lessons, whether this occurs in the classroom or in a museum program. If these lessons are accomplished in such a way as to relate to the familiar world of a child, then perhaps they will be more likely to continue with the process or art activity in their home and spend less time with screen entertainment.

### **PERSONAL MOTIVATIONS FOR RESEARCH**

My personal motivations for understanding this research derive from my childhood. As a child of the 1980s in a middle class family, we had one television and

one Nintendo Entertainment System. My family and I spent much of our time doing art activities, including photography, making holiday cards and visiting craft malls. As I see the children in my family now, I realize how much recreational technology and new forms of electronic entertainment fill their leisure time. My cousins each have their own game system of their choice, as well as four televisions in their home. With all of these technological leisure activities, what has happened to the creative art making activities?

Another personal motivation comes from my spouse's childhood. He grew up with four brothers and lived a very meager lifestyle. He has no memories of art activities in his household. This led me to wonder whether there was a connection between the number of children in the household and the amount of art activities taking place within the home. A family with five children may find less time for art activities than a family with one or two children.

Also through conversation, the possibility of the parent's level of schooling being a factor affecting art experience, as well, was brought to my attention.

### **PROFESSIONAL MOTIVATIONS FOR RESEARCH**

My professional motivations began when I discovered an organization called Kids Health. Kids Health (2005) states that, "70% of child-care centers use TV during a typical day. In a year, the average child spends 900 hours in school and nearly 1,023 hours in front of a TV" (How TV Affects Your Child, para. 1). Excessive amounts of television viewing could lead to a child being overweight and not as socially active as



they should be, it also reinforces gender-role and racial stereotypes that could shape a child's beliefs in negative ways (Kids Health, 2005).

These claims, I believe, are linked to the overwhelming amount of technological devices that are brought into our homes. How might it be that these devices have changed our interaction with art making? This question is at the heart of my research, as it became the motivation that drove this investigation.

### **SIGNIFICANCE TO ART EDUCATION**

With the continuous growth of technological entertainment available in the world today, I believe children are spending less time with the creative and developmental arts. Children who are exposed to creative processes and self expression could carry these experiences with them as they grow into adults, and apply these experiences to their lives and to the lives of their own children, as well.

Art educator Viktor Lowenfeld (1957) expressed these ideas in his book *Creative and Mental Growth*:

It is the aim of art education to use the creative process to make people more creative regardless of where this creativeness will be applied. If Johnny grows up and through his aesthetic experiences has become a more creative person who will apply it to his living and to his profession, one of the main aims of art education will have been fulfilled. (p. 5)

If art educators familiarize themselves with the art activities taking place in the home, they can relate those activities to their instruction, whether it occurs in the

classroom or the museum. If these lessons can connect with activities a child is familiar with, the child may be more likely to continue with the process or art activity in their home and spend less time with technological leisure activity such as video games or television.

Educators in general, and not only art educators, can benefit from this study. Integrating activities from the home into other disciplines of study is a possibility. There is an increasing concern with educators about students' learning styles. In a classroom in which the majority of learning is achieved through worksheets and textbooks, students who are visual or auditory learners have an advantage.<sup>1</sup> Those students who are kinesthetic learners are at a disadvantage in a classroom in which hands-on learning is limited. Kinesthetic learners strive for activity and exploration, learning best through moving, touching, and doing. By integrating art activity into classroom studies, those learners will be able to utilize their preferred learning style. For instance, as students learn about the human body from a science textbook, instructors can have students create a life size human body out of paper and make the organs with colorful construction paper. There is a kinesthetic activity that can be designed for most lessons and units in multiple disciplines.

Another concern for not only educators but parents is the amount of time students spend sitting at their desks. Introducing art activities into the regular classroom will also help get students moving and out of their seats.

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<sup>1</sup> Visual learners are those who learn by seeing. They may think in pictures and learn best from visual displays. Auditory learners learn by hearing. They learn best through verbal lectures, discussions, talking through a lesson and hearing what others have to say.

By studying the art that students make in their homes, teachers are better able to recognize the type of activities that engage learners, and utilize this information in constructing their curricula. Through this investigation, greater knowledge is gained that will assist teachers in understanding the range of artistic activities that might be both interesting and engaging for students.

## **Chapter 2: Review of Literature**

### **RESEARCH METHODOLOGY**

When taking the preliminary steps for research it is important to investigate all research options to identify which methodology or methodologies are most suitable. The materials included in this section of my literature review helped me to identify my research method and understand this methodological approach as it relates to my investigation. These materials also gave me insight into educational research.

Considering the various forms of research and scientific studies available for use, in *Education Research: The Hardest Science of All*, David Berliner (2002) designates educational research as being the most difficult. Just as scientists of engineering and chemistry base their methods on previous research, educators do the same. However, “educational research is considered too soft, squishy, unreliable, and imprecise” (Berliner, 2002, p. 18). What makes educational research difficult is the lack of a controlled context. This information is pertinent to art educators as well, whether research is being done in the classroom, museum or at home, the slightest change of events can alter the context of a study. Educational research is also challenged by what Berliner (2002) calls the “decade by findings” (p. 20). Because of the constant changes in society and culture, findings from one decade could become of questionable value in the next.

Berliner’s article was significant to this study in helping me to prepare for this investigation. I also gained a better understanding of educational research and the

fragility of the results, as the context in which educational research is investigated can change frequently. The results I collect during this investigation could be significantly different from results gained if this study was to be done again within the next several years.

Richard Jaeger (1997) contributes to the knowledge of survey research by beginning with the very basics. *Survey Research Methods in Education* defines basic terms used in survey research. Each term is then described in detail and models are given to apply these terms to one's own survey research. Jaeger (1997) defines a population as being "any group of persons, objects, or institutions that have at least one characteristic in common" (p. 450). Also included in this book is information about population sampling. How many surveys must be given in order to receive accurate results? With a smaller population, 10%-25% is an accurate sample. However, when researching larger populations, over 10,000, a much smaller sample is sufficient. With a large population, less than 1% is an appropriate number of surveys to be given and results will be representative of the population (Jaeger, 1997). Examples are given for staging the process of developing a questionnaire, beginning with defining the problem and followed by the breaking down of statements surrounding the problem to form the questions. Chapters on reduction, editing and analysis of data are included, as well.

Jaeger's writing on survey research methods for educational research significantly impacted my decision to use the survey research methods for this investigation. The information provided on sample populations gave me insight on exactly how I would carry out this investigation in Austin, Texas. Combining Jaeger's information on

population sampling and my own research regarding the population of Austin, I discovered the amount of questionnaires that would need to be collected in order to gather accurate data. Just as Jaeger suggested, with Austin having such a large population, less than 1% were needed to be sampled in order for beneficial information to be recorded.

*Research in Education* (McMillan & Schumacher, 2001) describes a variety of research methods including survey research and questionnaires. The chapter titled “Quantitative Data Collection Techniques” focuses on formats and scales that can be applied to questionnaires. Within this chapter there is also information on defining objectives as well as writing questions and statements. When using a questionnaire, McMillan and Schumacher suggest defining the specific objectives that should be achieved. By laying out the objectives first, one can then write questions and statements that will lead to a successful and properly answered questionnaire.

Once the decision was made to use questionnaires to complete this investigation, McMillan and Schumacher’s book laid the foundation in knowing how to successfully construct a questionnaire.

## **ART AND CHILDHOOD DEVELOPMENT**

In order for my research to have significance, it was a first priority to understand why this research is important. As the materials below suggest, self expression and discovery are key in a child’s development, and art activity is a successful outlet in facilitating self expression.

*Supporting Creativity and Imagination in the Early Years* by Bernadette Duffy (2006), puts emphasis on how vital creativity is in a child's development. According to Duffy, "creativity is now seen as a crucial element in education" (p. 4). Duffy also refers to creativity as a "human desire" (p. 5). Creative and imaginative experiences can lead a child to explore values, improve their capacity for thought and communication as well as nurture their feelings and sensibilities. Another key factor in a child's development is representation, such as drawing a picture, building a model using blocks and painting (Duffy, 2006). Representation is a way a child can express, preserve and share their experiences.

Having been a child who constantly expressed emotions through drawings, I was certain self expression played an important role in a child's development. This concept, playing a key role in this investigation, I found, was well supported by many early childhood educators and art educators such as Natalie Cole, Marion Richardson, and Viktor Lowenfeld.

Viktor Lowenfeld was a firm believer in creativity being essential to a child's growth. Lowenfeld believed that through art and creativity a child will be more successful in other areas of their life. In *Creative and Mental Growth*, Lowenfeld (1957) shares his ideas on transferability, the notion that a child who experiences creativity will, when older, transfer that creativity to other areas such as science, business or which ever profession they may choose. Lowenfeld (1957) states, "It is the aim of art education to use the creative process to make people more creative regardless of where this creativeness will be applied" (p. 5).

Art and Education professor Joseph Orzechowski (1957) considers creativity a sign of personal growth, whether in children or adults: “Creative activity is the process of growth, and growth is the product of this process” (p. 3). However, in his article “The Nature of Creative Activity as Applied to Children’s Art” (1957), Orzechowski states that a child’s world is much smaller than that of an adult, they are limited by language and by experience, thus making creative activity that much more important in a child’s development. According to Orzechowski (1957), “a child is self centered and creates according to his feelings towards objects or situations, but as he matures he becomes more society conscious and aware of the feelings of others” (p. 19). Memory, imagination and intuition play vital roles in a child’s development of understanding and a child’s creativity is based on their experiences and understanding of relationships (Orzechowski, 1957).

Orzechowski’s ideas of creative activity being the process of growth brought me to reconsider the boundaries of the art activities in my investigation. Originally, I was going to focus only on art making activities in which a tangible product was made, such as drawing, painting, or photography; more or less the visual arts. However, the act of being creative in many other disciplines is just as important in a child’s development and growth. Therefore, activities such as playing music, cooking, and visiting sites in which art was being sold or created were then considered as an art activity within this investigation.



## **ART LEARNING IN THE HOME**

There are many avenues in which children can make art: in school, after-school programs, museum programs, and in their homes. How does art making in the home differ from art making in public facilities? Are children more comfortable making art in their home? These are questions I asked when reviewing literature that focused on art learning in the home. In order for my research to be of substance, the answers to these questions were imperative.

Elementary art teacher Jennifer Crum (2007) had very few memories of her art experiences in school, though she knew she had experienced learning in art within formal school settings. However, she had incredibly vivid memories of the art work she did in her own home. Crum believes the reason for this is that her art at home was more personal. Wanting to give support to her theories, Crum conducted an ethnographic study in several of her students' homes about the art they made there. In her article "Educating the Art Teacher: Investigating Artistic Endeavors by Students at Home", Crum (2007) discovered that in several of her cases the art works were more autobiographical and personal to the children, supporting her theories of art making in the home to be the cause.

Crum's article provided a realization that this investigation is quite personal in certain aspects. As a child I was constantly drawing and creating artworks from glitter and glue and making birthday cards for friends and relatives. However, I have only one recollection of creating art at school, and that memory is not a happy one either as my 4<sup>th</sup> grade teacher told me she did not understand my art. Children, I believe, are often more

comfortable at home, therefore that comfort is going to be reflected in the art they make there. The art that children create at home will also reflect their own tastes, as they are not being given an assignment to complete, such as what occurs in school.

Brent Wilson explores art making in the home as well. In his article “Contemporary Art, the Best of Art, and Third-site Pedagogy”, Wilson (2008) investigates art making by “kids who create their own visual culture” (p. 8). Wilson identifies this visual culture as the first pedagogical site and the second site as the school art classroom. The third pedagogical site is when “kids and adults relinquish their usual roles, their usual status as kids or adults, when they share sources and their tastes in art” (Wilson, 2008, p. 9). This third site can often be found in the home and the art is often inspired by comic books, video games and cartoons (Wilson, 2008). This work by Wilson acknowledges the critical value of home-based art education, an idea which was at the core of this investigation.

## **TECHNOLOGY**

Does the amount of electronic entertainment available to the child correspond with the amount of art activities taking place in the household? What risks are we taking by sitting the children in front of a television or buying them another video game? In doing so are there any risks at all? How much television is too much? These are questions I have come across in researching the changes technology has made within our culture. To gain a better understanding of this question and how to acquire an answer, it

is imperative to acknowledge the changes that have been brought on by the increasing amounts of electronic entertainment devices.

Paul Duncum (1996) bases his article, “Education and Technology: These are the Days of Miracle and Wonder”, on the “The empire of the Image” (p. 14). Massive amounts of images and information are now available in our homes, creating what is called the aesthetics of the everyday. This new aesthetic embraces every image seen, including the ephemeral and trivial. There are educators who are dismissive of this new consideration of aesthetics, viewing television as a plethora of images that are seemingly quite meaningless. Instead of acknowledging television as a complex visual device, they regard it as trivial entertainment. However, Duncum (1996) claims that those who support the aesthetics of everyday see “visual density” and consider television as a “mundane pleasure that is under the control of the viewer” (p.15). There are different viewpoints on the matter of the growth of technology. One side regards technology as giving endless opportunities; the other believes it will hinder communication and true aesthetic engagement.

I turned to this article in the hopes of finding a better understanding regarding which side of the issue I belong. In one way, I agree with those who see technology as supplying the aesthetics of everyday. However, I believe this concept is lost on children. Children who do not understand the concepts of visual culture and aesthetics are not turning to certain technologies for anything but entertainment. Therefore, in some cases I do believe these new technologies are hindering communication and prohibiting children from partaking in meaningful aesthetic engagement.

Sandra Hofferth and John Sandberg used previous data collected, as well as their own research, to reach conclusions about how American children under the age of thirteen are spending their time each day. “How American Children Spend Their Time” (2001) gives insight about what activities are present in American households and how much time children spend with these activities. According to Hofferth and Sandberg (2001), “Much of our language refers to children’s behavior in terms of time, whether they spend too little time studying, reading or helping around the house or too much time watching television or hanging out with friends” (p. 295). However, despite these terms used in our language, it was found the actual time spent on such activities has been rarely studied (Hofferth & Sandberg, 2001).

Leigh Goessl (2009) claims that technology has both negative and positive effects on children. In her article “Technology: Its Effect on Children” (2009), Goessl gives reasons why technology has hindered children’s creativity but at the same time given children a vast amount of opportunities. Goessl (2009) states that creative role playing games such as “cops and robbers” that children used to play, has now been replaced by video games. Other negative effects on children that can be linked to the growth of technology are childhood obesity, video/computer game addiction, and Internet predators. Goessl has also found positive aspects in this growth of technology: “Technology, specifically the Internet, offers a vast amount of knowledge and children have access to absorb much of this information” (2009, para. 11).

For this investigation, literature regarding children and technology, art learning in the home, art and childhood development, and survey research were utilized. This

literature was significant in the formation, preparing, and implementation of this investigation. The information gained from this literature and how these ideas were employed in this study is outlined and discussed in the following chapters.

## **Chapter 3: Research Method**

### **HYPOTHESIS OF THIS INVESTIGATION**

Entering into this investigation I believed a variety of art activities taking place in the home would be discovered. However, another speculation was that there would be a great amount of electronic or screen entertainment found in the homes, as well. I considered that a positive correlation would be present between the parents' or guardian's education level and the amount of art learning taking place in the home. I believed a household with parents possessing more years of schooling would be likely to have more art activity in the home, than that with parents who do not have as much schooling. I predicted a negative correlation would occur in the number of electronic entertainment devices and the number of art activities conducted in the home, as well. Another factor, regarding the number of children residing in the household, I believed would also play a role in the amount of art activity found in the home. I speculated that a household with more children is less likely to be as active in the arts as a household with fewer children.

These speculations are examined throughout the data, analysis, and conclusion sections of this study.

### **SURVEY RESEARCH METHODOLOGY**

To conduct this investigation I used a survey research method. This survey consisted of a very direct questionnaire for adults with children in their family between the ages of 4 and 11 attending public school in the Austin Independent School District (AISD). The respondents were asked to answer the following questions: What art

activities are done in the home? How often? Questions were also included that may affect their first answers, such as: How many children reside in the home? How many televisions are in the home? Gaming systems in the home? Inquiry was also made into the parent's/guardian's level of schooling. (See Appendix A for a copy of the questionnaire).

The survey research method and questionnaire were determined to be the best process for obtaining objective information and direct answers. By not asking these questions in person, as is done in interviews, the respondents were less likely to be intimidated to write what they thought would be seen as "correct" answers. Also, by using a questionnaire I presented direct questions each respondent could understand easily, so that they did not inquire further into my research. This was done to help limit the amount of bias or exaggeration in the responses that were given.

This survey was conducted in three public schools located in various areas of Austin, Texas. Within these three different locations were found a variety of social classes and income, as well as educational standards. Hill Elementary, located in North Austin is a Blue Ribbon School with approximately 700 students in Kindergarten through 5<sup>th</sup> grade.<sup>2</sup> Hill Elementary was also given a state accountability rating of *Exemplary*. Blackshear Elementary located in East Austin houses less than 500 students and was given a rating of *Recognized*. Odom Elementary in South Austin has a student

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<sup>2</sup> Schools considered to be Blue Ribbon Schools have been awarded this honor by scoring in the top 10% in Texas in assessment testing.

population near 400 and was given a rating of *Acceptable*.<sup>3</sup> The students attending Odom Elementary are considered by the state to be *economically disadvantaged*. The questionnaires were given to the students to take home to their parents or guardians to be answered and then returned. Students were given an incentive of a decorative pencil for returning the questionnaire. After collecting as many surveys as possible, the total number accumulated was 306. I collected 102 questionnaires from Hill Elementary, 40 from Blackshear Elementary, and 164 from Odom Elementary. After numbering each questionnaire I then used a random number generator from [psychicscience.org](http://psychicscience.org) to randomly select 40 questionnaires from each school to do further analysis (See Appendix B for list of numbers generated). The 40 randomly selected surveys from each school provided a total of 120 questionnaires that were applied to this research.

#### **DEFINITION OF TERMS**

Art Activities--any process or activity involving the making or learning of art.

Art Experiences--any process involving the making or learning of art including visiting sites in which art is made or can be sold or seen.

Art Learning--the combination of art activities and experiences, encompassing both.

Correlation--a single number that describes the degree of relationship between two variables.

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<sup>3</sup> The State Accountability Ratings are given each year by the Texas Education Agency. The ratings are based on the students' performance on the *Texas Assessment of Knowledge & Skills* (TAKS). Schools are rated as either Exemplary, Recognized, Academically Acceptable, Acceptable, or Academically Unacceptable.



Electronic Entertainment--leisure activities using technology for entertainment purposes such as watching TV, playing gaming systems, or using a computer.

Electronic Entertainment Devices--a device that uses technology and electricity for entertainment purposes (e.g., TV, game systems, stereos, computers).

Negative Correlation--a number between 0 and -1 representing the increase of one variable and the decrease of a second variable.

Population--any group of persons, objects, or institutions that have at least one characteristic in common.

Population Parameter--any numerical value that can be calculated using information on all members of a population.

Positive Correlation--a number between 0 and 1 representing the increase of both variables.

Questionnaire--technique used for obtaining information from subjects for a specific purpose; using the same questions for all subjects to ensure anonymity.

Sample--a part of the population of interest, the part used for collection of data. Samples are representative of the population.

Sample Statistic--any numerical value that is calculated using data from members of a sample.

Target Population--group of persons, objects, or institutions that defines the object of investigation.

Technological Leisure Activities--leisure activity using technology without artistic purposes (e.g., Watching TV, playing video games for non-educational purposes).

## LIMITATIONS OF STUDY

The first limitation I employed in this study was who received the questionnaire. The population for my survey was households in Texas. The target population for this study was households within the city of Austin in which children between the ages of 4 and 11 reside and attend a public school in the AISD. In an attempt to gain information from individuals representing a variety of income classes, I administered the survey within various areas of the city of Austin. Although my target population was households that contained students who attend schools within the AISD, only the adult, parent, or guardian of the house was surveyed.

According to the US Census Bureau (2006) there are approximately 127,000 households with children under the age of 12 in Austin, Texas. With such a size of population, less than 1% of it is required to be surveyed.

In order to analyze the data I received from the questionnaires, a scale was prepared in order to fit each household into a category based on the amount of art activities taking place. For example, a household in which zero art activity takes place will be in the category of having *no activity*. If the household's children participate in one to four art activities they are considered as having *low activity*. The scale then increases to households considered as having *average activity* if the children participate in five to seven art activities, and *high activity* if there are eight or more art activities listed. A similar scale was arranged to measure the number of electronic entertainment devices present in the home. The parents' or guardian's education level was measured as well, but this was done more directly as the respondent checked a box on a list which

represented the highest level of education present in the household. With the data collected from the questionnaires combined with the data from the scales, I was able to generate quantitative results. This collected information is presented, and the results are analyzed and discussed in the following chapter.

## **ART LEARNING IN THE HOME: COLLECTION OF DATA**

### **Chapter 4: Data and Analysis of Data**

In this chapter the data collected concerning the variables of this study are discussed and analyzed. The variables considered in this research to have an effect on the amount of art activities present in a household were, (a) the parent's education, (b) the amount of electronic entertainment available to the children in the house, (c) the number of children residing in the house. As I discuss the data pertaining to each variable, I also include the relationship found between the amount of art activities present in the home and these variables.

#### **ART ACTIVITY**

One of the goals of this study was to uncover how many art activities are taking place in family households within the city of Austin. The questionnaires given to participants included three questions pertaining to the types of art learning activities that take place in their household. The participants were first asked to list any sort of art making hobbies their children do. They were then asked to list any art activities their families do together. The third approach used to uncover art activities in the questionnaire was to include a list of 12 less common art activities the participants could read, and then check those activities that occur in their household. This tactic of listing uncommon art activities was found to be very helpful in a preliminary survey.<sup>4</sup> When those participants were asked about the art activities taking place in their homes, the majority could only remember the most common, such as drawing or painting. By listing less common art activities such as craft mall visits, quilting, and costume making, the

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<sup>4</sup> A preliminary survey using 40 participants took place in the fall of 2007. The questionnaire used in the first survey contributed to the design of the questionnaire employed in this research.

participant's were able to note art activities they had not at first thought of as being considered an art activity.

### **General Data of Art Activity**

The following data was collected from the 120 questionnaires analyzed for this study. A scale was created in order to categorize each questionnaire by the amount of art activities listed within the questionnaire. The questionnaires were categorized as having *no activity*, *low activity*, *average activity*, or *high activity*. If the participant listed one to four activities they were considered to have *low activity*, five to seven activities was thought to be *average activity*, and eight or more activities listed was considered *high activity*. Of the 120 analyzed questionnaires, the average amount of art activities listed was six. 41 questionnaires were categorized as having *average activity* by listing five to seven activities. The number of questionnaires that were categorized as *no activity*, *low activity*, *average activity*, and *high activity* is seen in Table 1.

Art Activity Category	Number of Questionnaires
No Activity	9
Low Activity	37
Average Activity	41
High Activity	33
Total Number of Questionnaires	120

Table 1:     Categorized Questionnaires

After categorizing the questionnaires by art activity, they were then organized by school. With 22 *high activity* questionnaires within the households, Hill Elementary showed the greatest amount of high art activity. Having 22 *high activity* questionnaires was more than half of the 40 randomly selected questionnaires from that school. Odom Elementary had the greatest amount of questionnaires categorized as having *no activity*, with six. Blackshear Elementary produced three questionnaires listing *no activity*. Hill Elementary was the only one of the three schools in which there were not any questionnaires categorized as having *no activity*.

A pattern was found between these three school's state accountability ratings and their numbers of categorized questionnaires. Odom Elementary, which had received a rating of *acceptable* by the State, had the largest amount of questionnaires containing no art activities. Blackshear Elementary, rated as *recognized* by the State of Texas, which is the second highest rating given, had the most questionnaires categorized as having *average activity*. The school with the greatest amount of *high activity* questionnaires returned is also the school given the highest rating of *exemplary* by the state. The presence of this pattern was not surprising; however I did not predict the number margins to be so wide. The complete study of each school and the outcome of the art activity scale are shown in Figure 1.

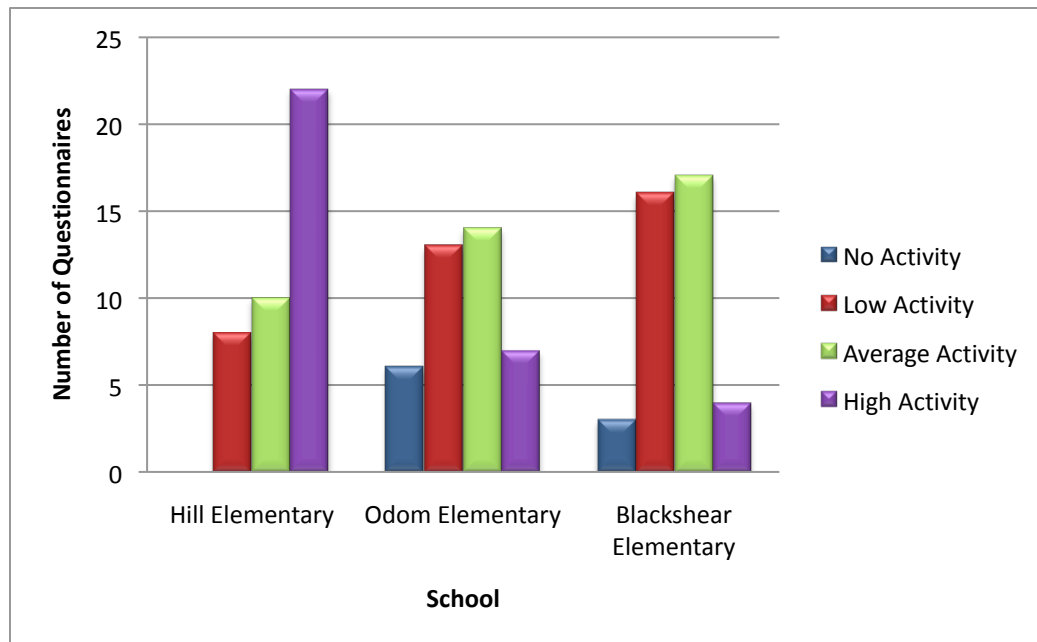


Figure 1: Art Activity Scale Results by School

### Frequency of Art Activity

Another goal of this study was to determine how often households were engaging in art activities. The participants were to estimate how many art activities their children engage in during the span of one month. A high majority of the participants (53%) responded with between one and three activities a month. Of the total questionnaires received, 12% responded with not carrying out any art activities per month.

Of the questionnaires categorized as having *low activity* and *average activity*, 68% and 63% of respondents engage in these activities one to three times in a one-month span. Those questionnaires belonging to the *high activity* category reported to partake in a much greater amount of art learning activities within one month, with 43% engaging in seven or more activities. Table 2 offers the frequency levels of each art activity category.

Art Activity Category	Percentage	Frequency of Activity
No Activity	78%	0
	22%	1-3
	-	4-6
	-	7+
Low Activity	16%	0
	68%	1-3
	8%	4-6
	8%	7+
Average Activity	2%	0
	63%	1-3
	20%	4-6
	15%	7+
High Activity	0%	0
	33%	1-3
	24%	4-6
	43%	7+

Table 2: Frequency of Activity

### Common Art Activities

To identify the art activities most commonly participated in by the households surveyed, the sum of each activity listed was gathered from the 120 questionnaires. The 120 participants listed a total of 701 art activities. After eliminating repeated activities, 23 different types of art activities were found among the households represented in this survey.



Holiday card making was determined to be the most common art activity listed among the questionnaires. This activity was listed 77 times. There are several reasons why card making may have been found to be the most common art activity. Card making is an activity that can be achieved by using materials found in most households; paper, markers, and crayons are the materials most likely used. The recent decline of the economy could also be a factor in why card making was listed so often, as families might be finding card making a way to save money, rather than to buy a card. Also, more people find making their own cards a personal alternative to buying a three-dollar pre-printed card off the shelf (Business Wire, 2005).

The least common art activities were gardening or garden designing and cookie baking and decorating, which were both included on only two questionnaires. The rarity of these activities is more than likely because of the time and effort that must accompany these events. Garden work and baking often require some adult supervision, which might also affect how often families engage in these two activities. Art activities such as garden design or cookie decorating are not obvious artistic processes, unlike drawing or photography; therefore fewer participants may also be inclined to include them in the survey.

The remaining art activities and the number of times they were included in questionnaires is shown in Table 3.

Art Activity	Number of Inclusions
Holiday Card Making	77
Music / Instrument Playing	68
Photography	66
Museum Visiting	61
Drawing	56
Craft Making	50
Scrapbooking	44
Computer Art/Animation	42
Coloring	36
Painting	36
Sewing	30
Clay Molding	28
Costume Making	23
Craft Fair Visiting	20
Family Tree Creating	15
Collage Making	13
Sculpting	10
Doll Making	7
Jewelry Making	6
Video Making	5
Quilting	4
Cookie Baking and Decorating	2
Garden Designing	2

Table 3: Art Activities Found in Questionnaires

There were several questionnaires in which activities that were not considered to be art activities in this investigation were listed. Most of the activities not considered for this study were activities pertaining to sports. The respondent to questionnaire #17 listed *working on the bicycle* as an art making hobby. Also, questionnaire #93 contained art making activities such as *riding the scooter* and *throwing a football*. These activities were also not considered to be art activities in this study.

Several respondents wrote comments on their questionnaires next to the art activities they listed. One respondent, who included photography as an art activity their

children engage in, commented that they let their children take their own pictures of whatever they like. Another respondent stated that their children decorate their refrigerator with everything they make and they also hang their children's art works on the wall. One respondent, with two children, commented that their house is full of boys that do not naturally enjoy creating art but are more inclined to build things.

## **EDUCATION**

Another question addressed in this study was whether the parent's/guardian's level of education is correlated with the amount of art activity children engage in at home. Results from research done at the University of Michigan's Department of Psychology implied that a child was more likely to attend college and be successful if his/her parents did so, as well. Also, parents who are educated tend to be more involved in their children's studies and activities and also give more motivation to their children (University of Michigan, n.d.).

### **General Data of Education**

The participants in this study who completed the questionnaire were asked to identify the highest level of education of the parent(s) or guardian(s). This question was followed by six answer options listed as:

- a. Did not receive high school diploma
- b. High school diploma
- c. Some college
- d. College graduate
- e. Graduate/professional school
- f. Doctoral studies

From the 120 randomly selected questionnaires, 27 of the participants were college graduates. However, 26 participants in the survey did not receive a high school diploma. Nine of the participants were involved in or had completed doctoral studies. The complete account of the participant's levels of education is shown in Table 4.

Education Level	Participants
Did not receive high school diploma	26
High school graduate	21
Some college	20
College graduate	27
Graduate/professional school	17
Doctoral studies	9

Table 4: Education Levels of Participants

Similar to how it was undertaken in the preliminary study, the participants were also categorized into two groups: those who did not complete a college level education and those who did. The participants who chose options a-c on the questionnaire are not college graduates. Those who chose options d-f on the questionnaire are college graduates. This was done as a way to compare more effectively the amount of art activities and education recorded by the survey participants.

Of the 120 participants, 67 (56%) had not completed a college education, and 53 (44%) had fulfilled a college degree or higher. The chart in Figure 3 displays the total amount of participants in each grouping.

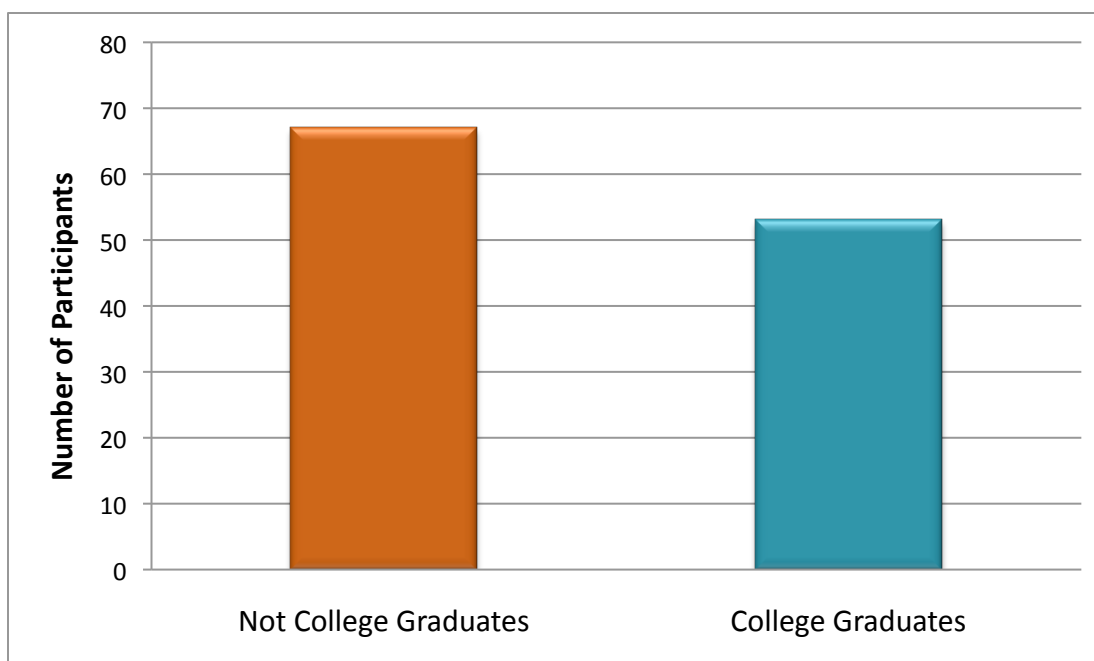


Figure 2: Education Levels of Parents/Guardians

### ***Education Levels by School***

Blackshear Elementary contained the most parents or guardians with no high school diploma: 18 participants. Odom Elementary had the second most, with eight; Hill Elementary, had the least, with *all* participants indicating they have received a high school diploma. The majority of the Hill Elementary participants were college graduates, with 15 having received a college degree. Odom Elementary had the majority of participants who received a high school diploma and some college education, with 11 of its participants in each category. The nine participants who completed or were involved in doctoral studies were parents or guardians from Hill Elementary, as Blackshear and Odom had no respondents in this category.

I was not at all surprised with the results involving Hill Elementary, the Blue Ribbon school. This school is one of only four elementary schools in the Austin

Independent School District to receive this honor, and they received a rating of *exemplary* through the state accountability rating system.

The role reversals of Odom and Blackshear were quite unexpected, as Odom received a state accountability rating of *acceptable*, which is the second lowest score on the scale. However, the majority of the participants in this study were high school educated or had received some college education. Blackshear, which scored *greater* than Odom with a state accountability rating of *recognized*, had the most parents or guardians who did not receive a high school diploma.

The chart in Figure 3 categorizes each school and education levels of the parents or guardians.

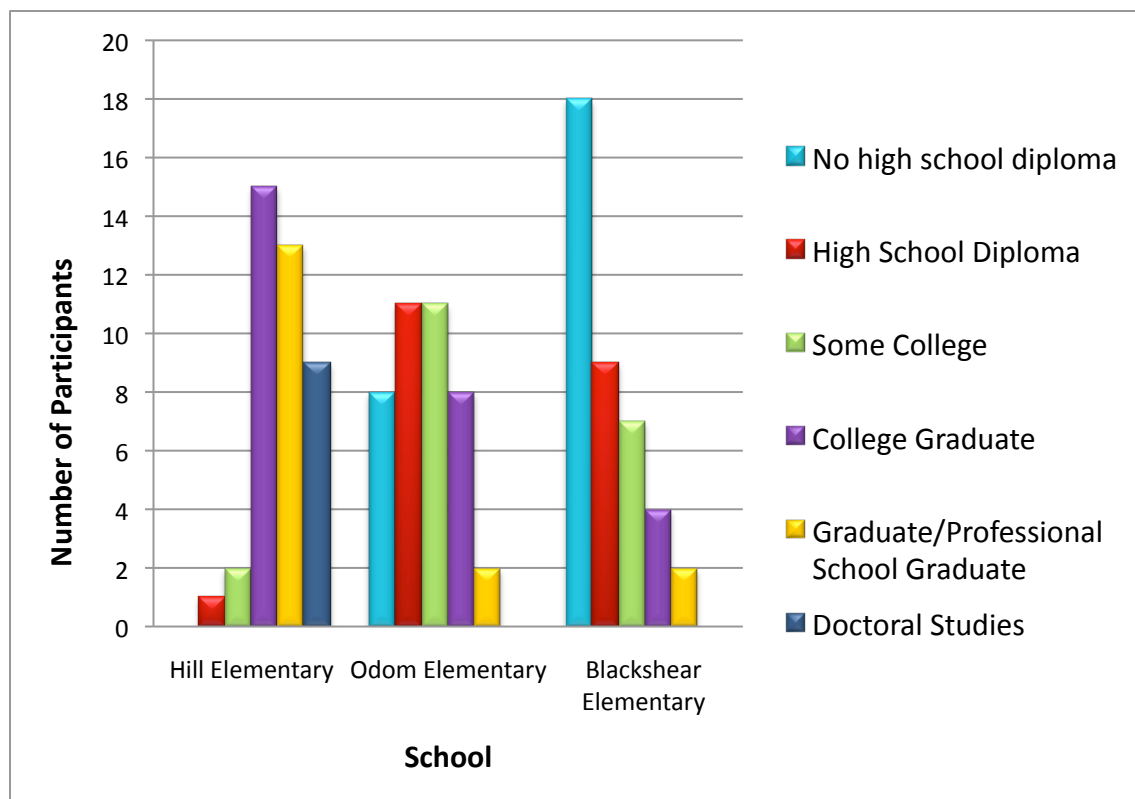


Figure 3: Education Levels by School

## Education and Art Activity

The reason for identifying the parent's/guardian's level of education was to use the data in a comparison of the amount of art activity found within the households. By comparing these gathered results, the goal was to ascertain a relationship between these two variables.

Of the participants who responded as having *no activity* of art in the household, 56% had not received a high school diploma, 33% were high school graduates, and 11% had some college education. 100% of those participants who responded as having *no activity* of art in the household were not college graduates.

Focusing attention on the opposite end of the activity spectrum were those participants considered to have *high activity* of art in their households. Of these participants, 36% were college graduates, 21% had attended graduate or professional school, and 15% were involved in doctoral studies. Together, 73% of those respondents who indicated *high activity* with art in their household were college graduates.

The pattern that had developed when considering the education and those participants having *no activity* compared to the education of those with *high activity* was quite apparent. The children of the parents/guardians who were college graduates engage in *more* art activities than the children of parents/guardians who are not college graduates. The chart showing this comparison is shown in Figure 4.

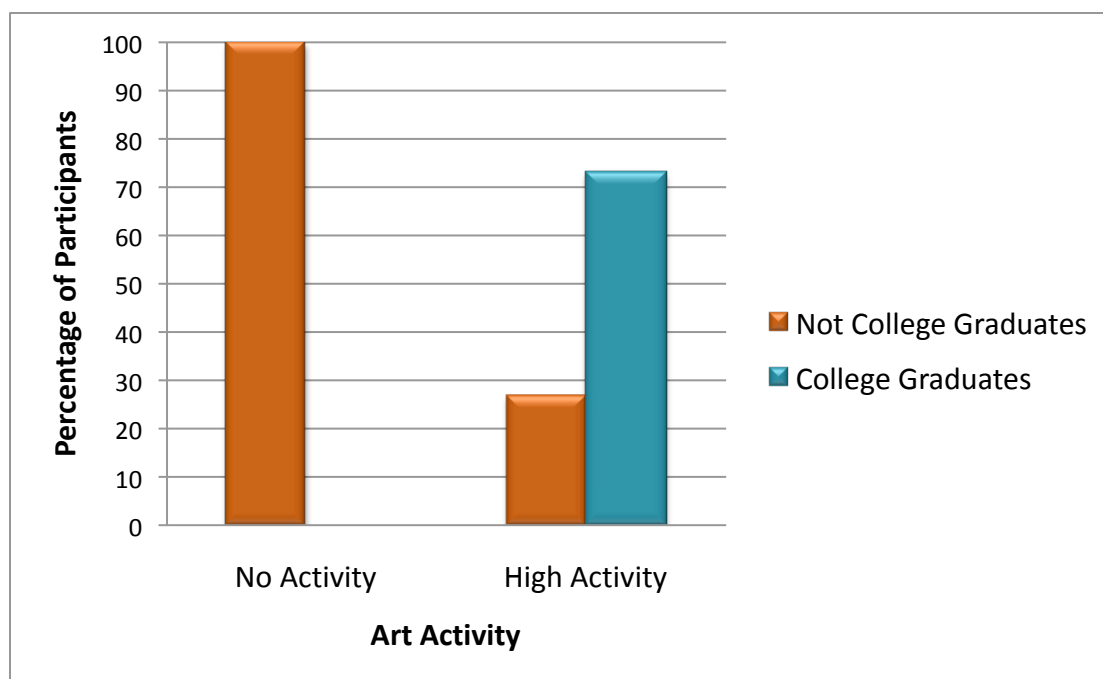


Figure 4: No Activity and High Activity Comparison

There were several questionnaires with responses that were extremely fitting to this pattern. A questionnaire in which the participant *did not* receive a high school diploma and implies that *no art* activities are done in their household fits the pattern uncovered. There were five questionnaires of this type. There were also questionnaires that fit the pattern with participants having a *higher* level of education and having an amount of *high activity* of art in their household. In Questionnaire #61, as seen in Illustration 1, the participant noted doctoral studies as being their level of education, and listed ten art activities in which their children engage.



2. What is the highest level of education of the parent(s) or guardian(s)? (please circle one)

- a. Did not receive High School diploma
- b. High School diploma
- c. Some college
- d. College graduate
- ☒ e. Graduate / Professional School *Father*
- ☒ f. Doctoral studies *Mother*

3. Do the children in your house have any kind of art making hobbies? (this can be anything from using glitter and noodles to make cards all the way to doll making or painting) If so please list:

*play-doh, beads, all sorts of paper, crayons, pencils*  
*markers, glue, glitter, etc*

4. Does your family ever do art making activities together in the home? (taking photos, scrap booking, crafts) If so please list:

*making cards, crafts,*  
*drawing,*

5. Below is a list of activities please check ones in which your family participates

<input checked="" type="checkbox"/> museum visits	<input type="checkbox"/> scrap booking	<input type="checkbox"/> clay sculpting
<input type="checkbox"/> collage making	<input checked="" type="checkbox"/> holiday card making	<input checked="" type="checkbox"/> sewing
<input checked="" type="checkbox"/> crafts fair visits	<input checked="" type="checkbox"/> costume making	<input type="checkbox"/> quilting
<input type="checkbox"/> family tree research	<input checked="" type="checkbox"/> music playing	<input type="checkbox"/> computer art/animation

Illustration 1: Questionnaire #61

The results of those participants with *average* and *low activity*, when compared to the education levels of the participants, did not have a definite relationship.

41 respondents were categorized as engaging in an average amount of activity. Of these having *average activity*, 24% did not receive their high school diploma, 24% were high school graduates, 15% had some college education, 12% received college degrees, 20% were educated in a graduate or professional school, and 5% were involved in doctoral studies. Altogether, 63% of those who indicated an *average activity* of art in their household were not college graduates and 37% were college graduates.

There were 37 survey participants categorized as having *low activity* with art in their household. Of these respondents, 30% did not receive a high school diploma, 19% were high school graduates, 14% received some college education, 27% received college degrees, 5% received a graduate or professional degree, and 5% were involved in or completed doctoral studies. The total percentage of those with *low activity* who are not college graduates is 62%, and 38% for those participants who are college graduates.

The education level of participants with art engagements recognized as *low activity* is very similar to the education levels of the participants with *average activity*. There was no definite pattern uncovered when these variables are compared. Figure 5 compares the results of *low activity* and *average activity* with the variable of education level.

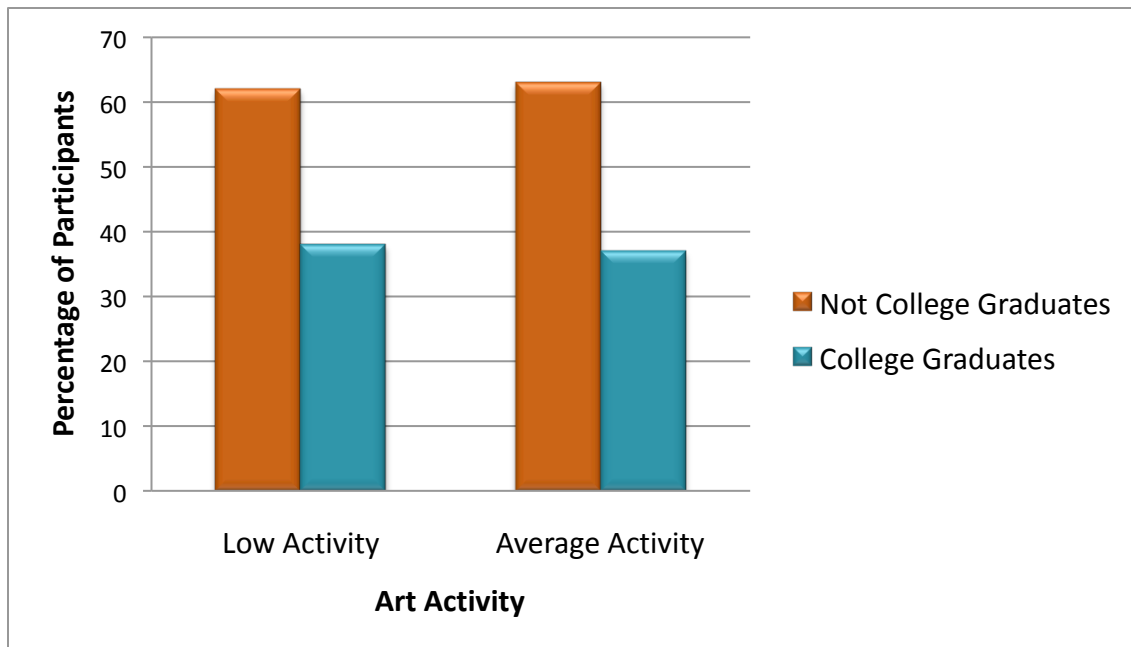


Figure 5: Low Activity and Average Activity Comparison

When the two groups of education levels--not college graduates and college graduates--are compared to the art activity categories derived from the scale, an understandable pattern is present. Figure 6 represents the pattern that emerged between art activity amount and the parent's or guardian's level of education.

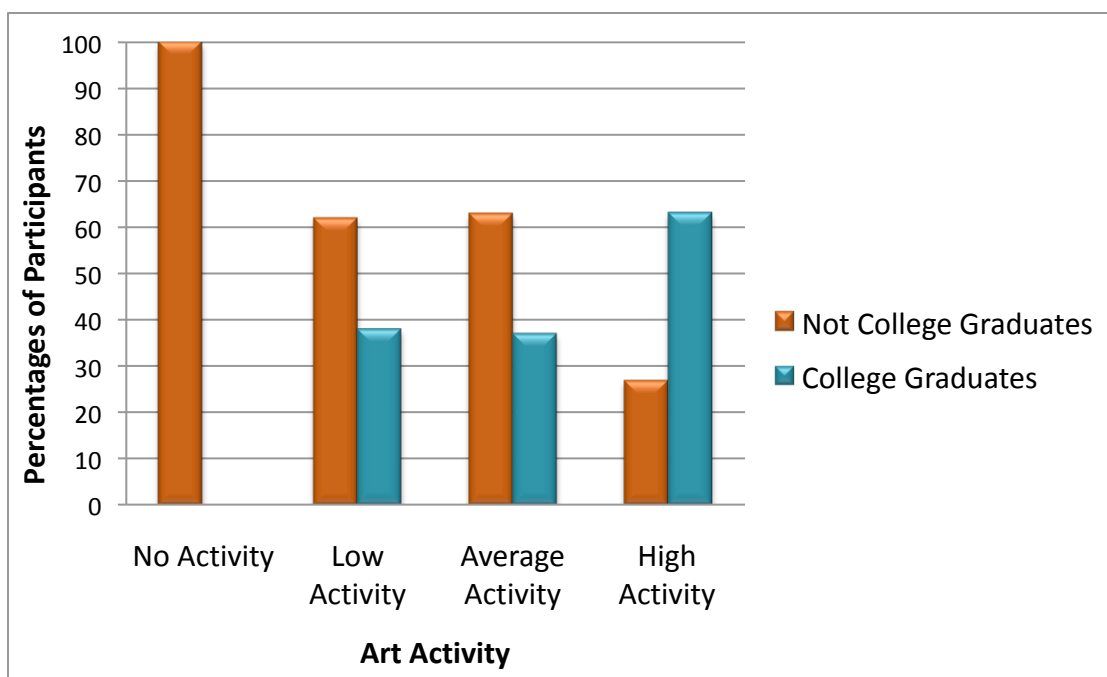


Figure 6: Activity Category and Education Level

The average numbers of activities done by each education level was another formula used in this study to determine whether a pattern was present. Those participants having no high school diploma listed their children engaging in an average of 3.2 art activities. Participants who had received a high school diploma listed an average of 4.6 activities. Those who had some college education had an average of 6.4 activities. The participants who were college graduates had the highest average number of art activities listed within the questionnaires. An average number of 7.7 art activities were listed for those who had graduated college. 6.9 was the average number of activities listed for those who possessed graduate or professional degrees. Participants involved in doctoral studies listed their children as being involved in an average of 7.0 art activities within their household. The scale below represents each education level and the average number of art activities belonging to each one.

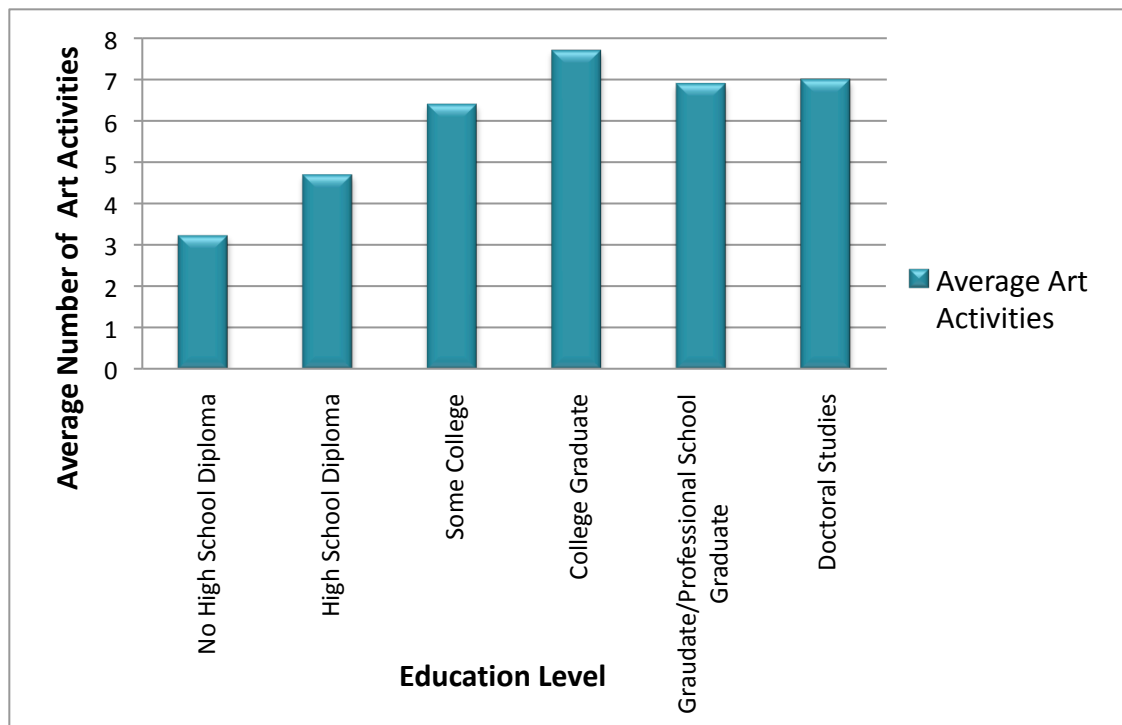


Figure 7: Average Art Activities by Education Level

### *Correlative Relationship*

A method often used to find the relationship between two variables is to determine if a correlation is present.<sup>5</sup> Using the random number generator, I selected 30 questionnaires from the 120 being used for this study. I first assigned each level of education a number consistent with the letters choices from the questionnaire. Numbers 1-6 replaced a-f. By use of a table, shown in Table 5, the results of each questionnaire were correlated, including the number of art activities listed and the number corresponding to the parent's or guardian's level of education.

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<sup>5</sup> A correlation is a single number derived from a mathematical formula that represents the relationship between two variables.

Questionnaire #	Number of Art Activities	Education Level
61	10	6
13	5	3
98	6	2
104	5	1
46	14	4
105	2	1
65	2	6
92	4	1
35	11	2
21	7	2
60	11	6
52	10	4
108	11	3
110	0	1
66	11	5
6	9	3
77	5	5
17	5	1
56	9	5
107	6	4
115	2	1
120	3	2
82	3	2
63	12	4
71	5	5
90	6	4
97	7	1
51	13	4
89	3	3
28	3	4

Table 5: Correlation Table 1

After completing the table, easycalculation.com was employed to determine if a correlation was present. If a correlation number is between 0 and 1, the correlation is positive. A positive correlation simply means that as one of the variables increased, the second variable increased as well. The greater the correlation number is to 1, the greater

the relationship between the two variables. The correlation number found between the amount of art activity and level of education was .43. This number indicates that there is a moderate correlation between the variables. The full scale of correlation strength is represented in Table 6.

Correlation	Strength
0.0 to 0.2	Very Weak
0.2 to 0.4	Weak, Low
0.4 to 0.7	Moderate
0.7 to 0.9	Strong, High
0.9 to 1.0	Very Strong

Table 6: Correlation Strength

By determining this relationship through the correlation formula, it is understood that there is a moderate relationship between the level of education of a parent or guardian and the amount of art activity their children engage in within the household.

### **Summary of Education Data**

After analyzing the amount art activities with the level of education as a variable, it was determined that a parent's or guardian's level of education has a substantial effect on the amount of art activity taking place within the household. I reached this conclusion by a review of my own research data and also by the correlation found between the two variables. The affect of the parent's or guardian's level of education is most notable in those questionnaires categorized as having either *no activity* or *high activity*. As a result, the relationship of education and activity level between these two categories is evident. The respondents having *high activity* of art in their household have higher levels of

education than those respondents who have *no activity* of art. However, when comparing the mid range art activity scale categories such as *low activity* and *average activity*, the results were quite similar, although still showing the same pattern between the variables.

## **ELECTRONIC ENTERTAINMENT**

Apart from the parent's/guardian's level of schooling, another variable I predicted would affect art making in the household is the amount of electronic entertainment devices present in the home. The increasing number of electronic entertainment and recreational options available to children in the United States has increased drastically over the last few decades. In 1948, there were approximately 35,000 televisions in use in the United States. A massive growth took place within the latter part of the 20<sup>th</sup> century; according to the CIA World Factbook, by 1997 there were then approximately 219 million televisions in the US (The Physics Factbook, 2007).

In the last two decades alone, there has been major growth in electronic entertainment for personal recreation. Advancements with gaming consoles, computer games, cellular phones, DVDs, and cable and satellite television have assisted in turning these devices into everyday household amenities across the US. Some devices, originally created for educational and communicative purposes such as cellular phones and the World Wide Web, are now used as vehicles to access games, music, movies, and yes, even television. With these devices now so commonly available to children, is there less art making taking place in the home? Is a child more likely to pick up the remote control instead of a paintbrush?

### **General Data of Electronics**

The survey participants were asked to list the number of electronic devices they owned that were used for entertainment purposes. As with the art activities, some

devices were listed on the questionnaire to aid the participant's memory. There was also space given on the sheet for the participants to write in any electronics they owned that they considered to be an electronic entertainment device. From 120 questionnaires analyzed for this study, the average number of devices listed was 7.9. The greatest number of devices listed on a single questionnaire was 19. The least amount listed was 2. Based on the average number of devices listed, another scale was created in order to group the questionnaires regarding the participants' involvement with electronics. The anchors of the scale were based on the number of devices listed, either 1-5(*low*), 6-10 (*average*), 11+(*high*). Of the 120 participants, 39 were grouped as having a *low* amount of electronic entertainment devices, 50 were *average*, and 31 were *high*. This information can also be found in Table 7.

Electronic Entertainment Group	Questionnaires within the Group
Low (1-5)	39
Average (6-10)	50
High (11+)	31

Table 7: Electronic Entertainment Groups

### ***Electronic Entertainment Devices***

The devices listed within the questionnaires that were considered electronic entertainment devices were televisions, computers, video game consoles, and DVD/VHS players. 949 of these devices were listed within the 120 questionnaires. Television was the most often listed device at 334. Video game consoles had the least amount of listings with 187. The complete number totals of the devices listed are seen in Table 8.



Electronic Entertainment Device	Number of Times Listed
Television	334
DVD/VHS Player	228
Computer	200
Video Game Console	187

Table 8: Electronic Entertainment Devices Listed in Questionnaires

Three of the participants had seven or more televisions in their home. However, there were 24 participants who owned just one television. All 120 participants had at least one television in their home, a fact that was not unexpected. An unforeseen result was found in that only 92 participants owned a video game console. With more than 11 consoles being released in the last 4 years, I had anticipated a greater number of participants owning at least one of these devices. A complete overview of the number of participants and the amount each device was listed in the questionnaires is found in Figure 8.

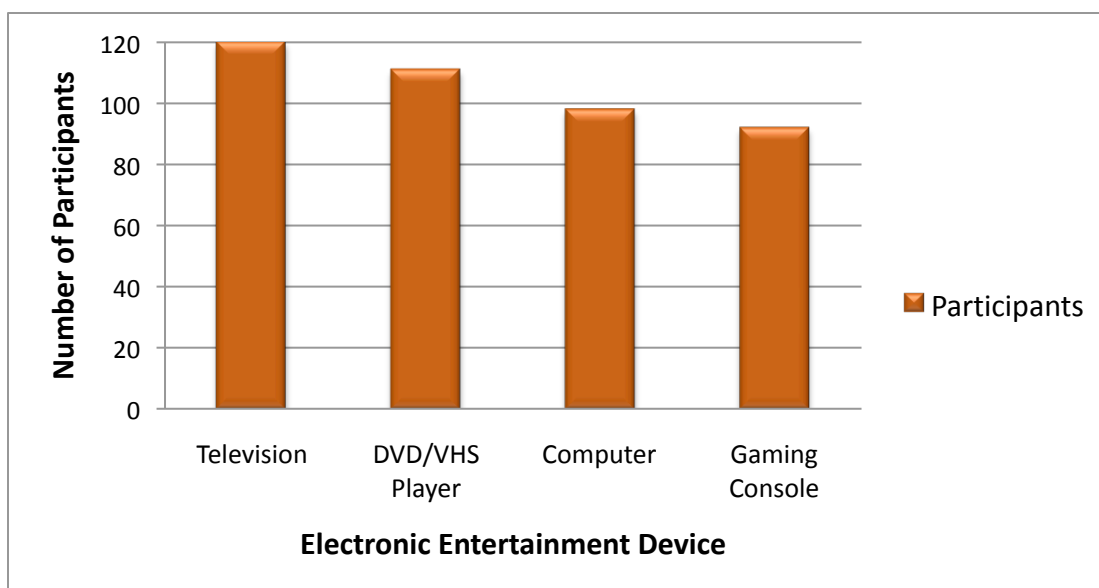


Figure 8: Device Ownership

As was done with the art activities, there were respondents who wrote comments on their questionnaires regarding the electronic entertainment devices they own. One respondent, perhaps realizing when asked to make a list of what they own, commented that it was hard to believe they owned so many electronic devices. Another respondent commented that there were strict time limits placed on their children when using electronic entertainment.

### ***Electronic Entertainment by School***

The average number of electronic entertainment devices owned by the 120 participants was 7.9. Survey participants whose children attend Hill Elementary were found to own more of these devices than those participants whose children attend Odom or Blackshear Elementary. The average participant from Hill Elementary owned 9.1 electronic entertainment devices. The chart in Figure 9 identifies the average number of devices owned by the participants of each school.

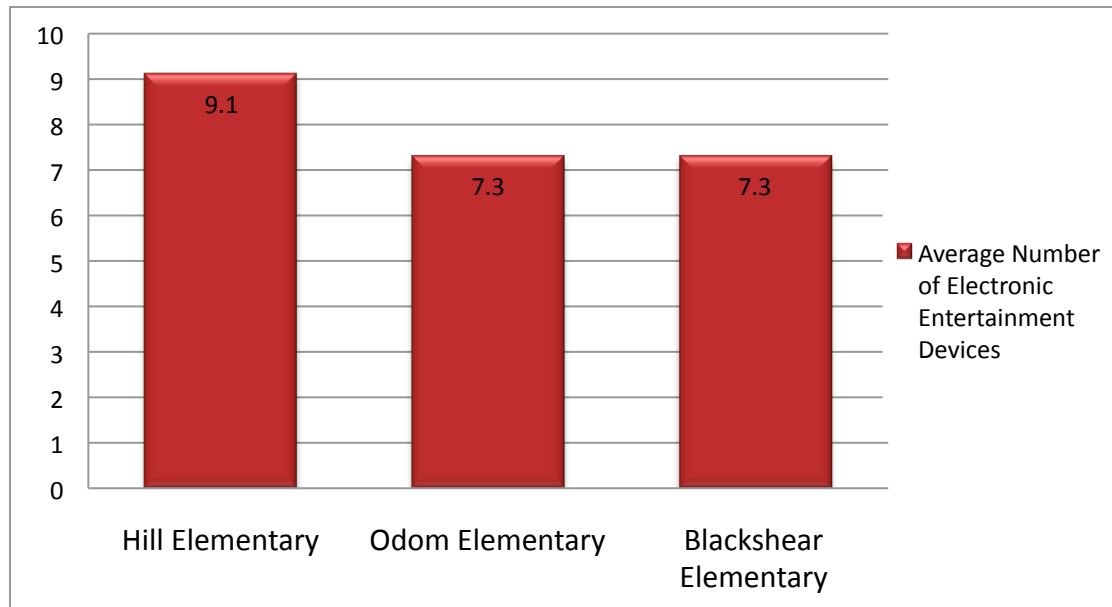


Figure 9: Average Number of Electronic Entertainment Devices by School

### Electronic Entertainment and Art Activity

As accomplished previously in the analysis of education levels, the amount of electronic entertainment devices listed was compared to the amount of art activity undertaken in order to determine if a pattern was present. My hypothesis was that as the amount of art activities increased, the amount of the electronic entertainment devices present in the home would decrease. Concurrently, I expected the opposite to occur; as the children's art activity level decreased, the amount of electronic devices in the home would increase.

Of the participants who partook in *no art activity*, as determined by their questionnaire, 67% of them had a *low* amount of electronic entertainment devices in their home. Of those participants who were considered as having *high activity* in art in their home, 21% of them had a *high* amount of electronic devices in their home. The majority of the *high activity* participants own an *average* number of devices. It was also found

that the participants who had *average activity* in art making, mostly own a *low* number of electronic devices. These results and more are displayed in Figure 10.

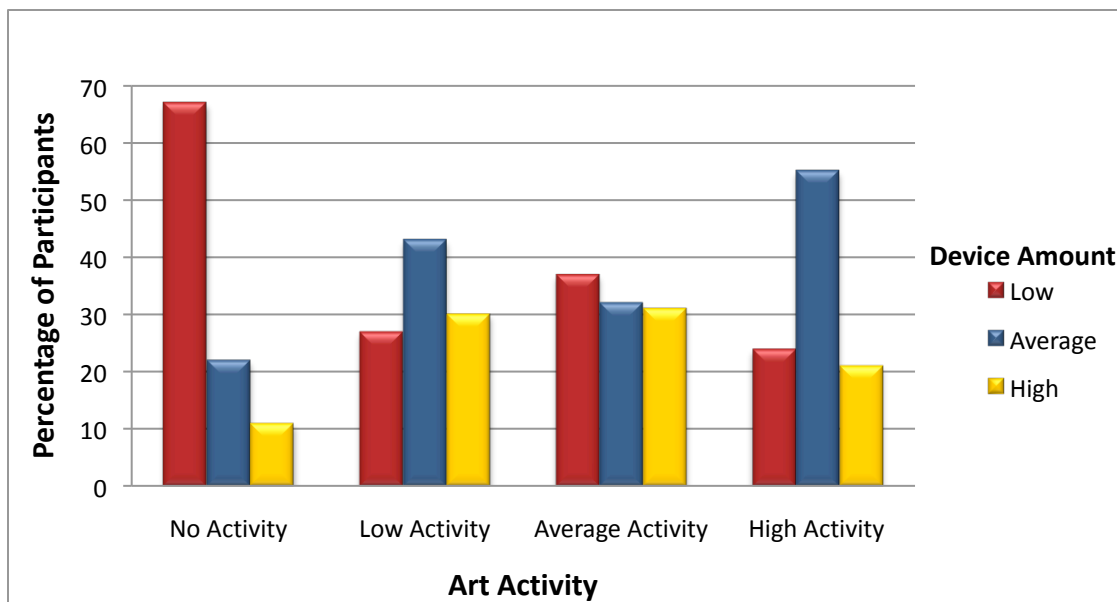


Figure 10: Electronic Entertainment Device Amount and Art Activity

When examination is made of Figure 9, it is noticeable that there does not appear to be any significant pattern present. My theory was that those participant households having *high activity* would have the device amount considered *low*. However, in this instance the majority of the device amount was *average*. I also expected the majority of those who have *low activity* in art making would have had a *high* device amount. This did not occur from the data the results collected.

There were, however, questionnaires that fit the pattern I was expecting, such as questionnaire #85, shown in Illustration 2. That participant was considered to have *high activity* after listing 13 art activities on the questionnaire. They also had only four electronic entertainment devices, meaning they were considered to have a *low* amount of these devices present in the household. Also, questionnaire #31, Illustration 3, was

similar to #85, but on the opposite end of the spectrum. This participant listed zero art activities, therefore they were considered as having *no activity*, also listed however, were 12 electronic entertainment devices, indicating them as having a *high* amount of devices. Some individual questionnaires, such as these two, supported my hypothesis, yet the overall numbers did not do so.

There were also questionnaires that combined information completely different from what I had anticipated. For example, questionnaire #46, Illustration 4, this participant fit into the *high activity* category in art making, and also had a *high* amount of electronic entertainment devices present in the home.

3. Do the children in your house have any kind of art making hobbies? (this can be anything from using glitter and noodles to make cards all the way to doll making or painting) If so please list:  
drawing, painting, crafts, paper dolls

4. Does your family ever do art making activities together in the home? (taking photos, scrap booking, crafts) If so please list: photos

5. Below is a list of activities please check ones in which your family participates

<input checked="" type="checkbox"/> museum visits	<input checked="" type="checkbox"/> scrap booking	<input checked="" type="checkbox"/> clay sculpting
<input checked="" type="checkbox"/> collage making	<input checked="" type="checkbox"/> holiday card making	<input type="checkbox"/> sewing
<input checked="" type="checkbox"/> crafts fair visits	<input checked="" type="checkbox"/> costume making	<input type="checkbox"/> quilting
<input type="checkbox"/> family tree research	<input checked="" type="checkbox"/> music playing	<input checked="" type="checkbox"/> computer art/animation

6. How often does your child/family do art activities (please circle one)

a. no art activities  
b. 1-3 art activities a month  
c. 4-6 art activities a month  
☒ d. 7 or more art activities a month

7. Please circle **how many** of the following electronic devices are in your home and used for entertainment purposes.

Televisions	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7+
Computers	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7+
DVD/VCR	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7+
Gaming systems (Playstation, Wii)	<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7+

Illustration 2: Questionnaire #85

3. Do the children in your house have any kind of art making hobbies? (this can be anything from using glitter and noodles to make cards all the way to doll making or painting) If so please list:  
NO

4. Does your family ever do art making activities together in the home? (taking photos, scrap booking, crafts) If so please list: \_\_\_\_\_

5. Below is a list of activities please check ones in which your family participates

<input type="checkbox"/> museum visits	<input type="checkbox"/> scrap booking	<input type="checkbox"/> clay sculpting
<input type="checkbox"/> collage making	<input type="checkbox"/> holiday card making	<input type="checkbox"/> sewing
<input type="checkbox"/> crafts fair visits	<input type="checkbox"/> costume making	<input type="checkbox"/> quilting
<input type="checkbox"/> family tree research	<input type="checkbox"/> music playing	<input type="checkbox"/> computer art/animation

6. How often does your child/family do art activities (please circle one)

☒ a. no art activities

☐ b. 1-3 art activities a month

☐ c. 4-6 art activities a month

☐ d. 7 or more art activities a month

7. Please circle **how many** of the following electronic devices are in your home and used for entertainment purposes.

Televisions	1	2	<input checked="" type="radio"/> 3	<input type="radio"/> 4	5	6	7+
Computers	1	2	<input type="radio"/> 3	<input checked="" type="radio"/> 4	5	6	7+
DVD/VCR	1	2	<input checked="" type="radio"/> 3	<input type="radio"/> 4	5	6	7+
Gaming systems (Playstation, Wii)	1	<input checked="" type="radio"/> 2	<input type="radio"/> 3	4	5	6	7+

Illustration 3: Questionnaire #31

3. Do the children in your house have any kind of art making hobbies? (this can be anything from using glitter and noodles to make cards all the way to doll making or painting) If so please list:  
crayons, markers, glitter, clay, chalk, etc. paint  
latch-hook, cross-stitch, knitting, sewing/quilting  
origami, stencils

4. Does your family ever do art making activities together in the home? (taking photos, scrap booking, crafts) If so please list: holiday crafts, photos

5. Below is a list of activities please check ones in which your family participates

<input checked="" type="checkbox"/> museum visits	<input type="checkbox"/> scrap booking	<input type="checkbox"/> clay sculpting
<input type="checkbox"/> collage making	<input type="checkbox"/> holiday card making	<input type="checkbox"/> sewing
<input type="checkbox"/> crafts fair visits	<input type="checkbox"/> costume making	<input type="checkbox"/> quilting
<input checked="" type="checkbox"/> family tree research	<input type="checkbox"/> music playing	<input type="checkbox"/> computer art/animation

6. How often does your child/family do art activities (please circle one)

☐ a. no art activities

☐ b. 1-3 art activities a month

☐ c. 4-6 art activities a month

☒ d. 7 or more art activities a month

7. Please circle **how many** of the following electronic devices are in your home and used for entertainment purposes.

Televisions	1	2	<input checked="" type="radio"/> 3	<input type="radio"/> 4	5	6	7+
Computers	1	2	<input checked="" type="radio"/> 3	4	5	6	7+
DVD/VCR	1	2	<input type="radio"/> 3	4	5	<input checked="" type="radio"/> 6	7+
Gaming systems (Playstation, Wii)	1	2	<input checked="" type="radio"/> 3	4	5	6	7+

Illustration 4: Questionnaire #46

The results from my research indicated that the amount of technology used for recreation in a home had no effect on the amount of children's art activity taking place in these locations.

### ***Correlative Relationship***

Although my hypothesis about what I would find in this study was not supported by the data overall, I still thought it necessary to check the correlation. As completed previously with the levels of education, a table was created using 30 randomly selected questionnaires from the 120 analyzed for this research. The number of art activities listed in the questionnaire was compared to the number of devices listed. This table is shown in Table 9.

Questionnaire Reference Number	Number of Art Activities	Number of Devices
10	7	7
45	2	13
28	3	5
82	3	10
54	6	14
113	4	19
108	11	7
32	5	7
112	4	14
13	5	11
55	5	7
43	4	9
31	0	12
63	12	11
30	5	11
64	8	9
69	9	4
19	3	2
79	6	5
58	5	12
8	2	4
75	10	15
42	5	12
6	9	13
102	7	8
67	11	10
16	6	8
53	4	7
105	2	11
117	4	5

Table 9: Correlation Table 2

The correlation found between the variables of art activity and electronic entertainment devices was .042, which is considered to be a very weak to negligible correlation. A positive correlation, occurring when the increase of one variable relates to



the increase of the second variable, is not the outcome I had anticipated. A negative correlation, present when one variable increases has the second variable decreases, was what I projected that data to determine. However, this correlation, being so weak, does not indicate a *significant* correspondence either way between the two variables.

### **Summary of Electronic Entertainment Data**

While evaluating the 949 electronic entertainment devices listed within the 120 questionnaires, it was discovered that every participant in the study owned at least one television. Conducting this research from the assumption that those households with less electronic entertainment to fill leisure time would turn to art activities, I anticipated a pattern of data representing this theory to present itself. However, the conclusion reached in accordance with the data collected concerning electronic entertainment devices and level of art activity was not as projected. There was no pattern discovered within the data related to the amount of electronic entertainment devices and the participants' amount of art activity undertaken in the home. Households that contained a high amount of devices such as televisions, computers, and video game consoles were just as likely to engage in as many art activities as households that had a low amount of electronic entertainment devices.

This conclusion was reached as a result of an analysis of the 120 questionnaires and also from the weak, positive correlation found.

### **CHILDREN IN THE HOUSEHOLD**

The number of children residing in the household was the third variable investigated in this research. Are art activities more prevalent in homes in which only one or two children reside? Perhaps households with a greater number of children lack time to allow the engagement of art making activities. In order to consider this subject as

a variable, it was needed first to determine how many children were in each household. Particularly, children within the same age range as those attending the elementary schools, ages 4 to 11. Children younger than four were not included in the analysis, as they do not attend public school yet, and are too young to engage in a majority of the art activities listed by the participants in the questionnaires. Children aged 12 and older were not included in the study as they often do not require as much assistance and attention in daily routines as younger children do.

Through conversation with others and my own experiences I anticipated finding a definite pattern between the number of children in the home and the amount of art activities they are partaking. I expected to find through research and the data collected that households with a fewer number of children were involved in more art activities than a household in which a greater number of children resided.

### **General Data of Children in the Household**

The participants were asked to include the number of children from each age bracket that resided in their home. Specifically, how many children are aged 4 to 7 and how many children are aged 8 to 11 reside in the home? A common risk present when using a questionnaire in survey research is finding that participants did not read the question correctly or did not understand it completely. This seems to have occurred when some respondents answered this question. Of the 120 participants whose questionnaires were analyzed for this study, 96 answered this question correctly, giving data that was valuable for the study. The remaining 24 questionnaires were simply omitted when analyzing this portion of the research concerning the number of children residing in the home. The following data was collected from the 96 beneficial questionnaires.

The least amount of children within the age range asked about, which was listed by the participants was one; the greatest number of children listed was four. The majority of the participants (44) had only one child within the designated age range. Seven participants had four children in the home. The average number of children residing in the homes of the participants was 1.8.

Figure 11 identifies the number of children residing in the 96 households.

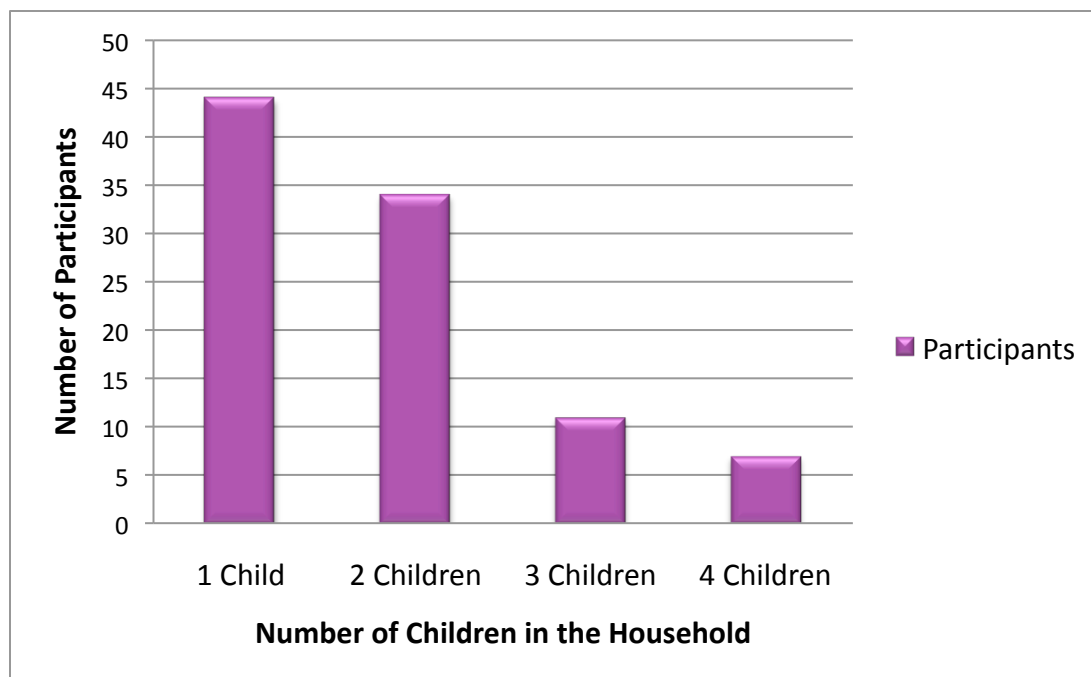


Figure 11: Number of Children in the Household

#### ***Children in the Household by School***

As recorded previously with the number of art activities and the level of education, the average number of children was also categorized by the school with which the participants were associated. Blackshear Elementary had the greatest average of 2.1 children per household. Odom was the second greatest average, with 1.8 children per household. Hill, the least, had an average of 1.5 children per household. The complete

listing of each school and the number of children residing in the households are shown in Figure 12.

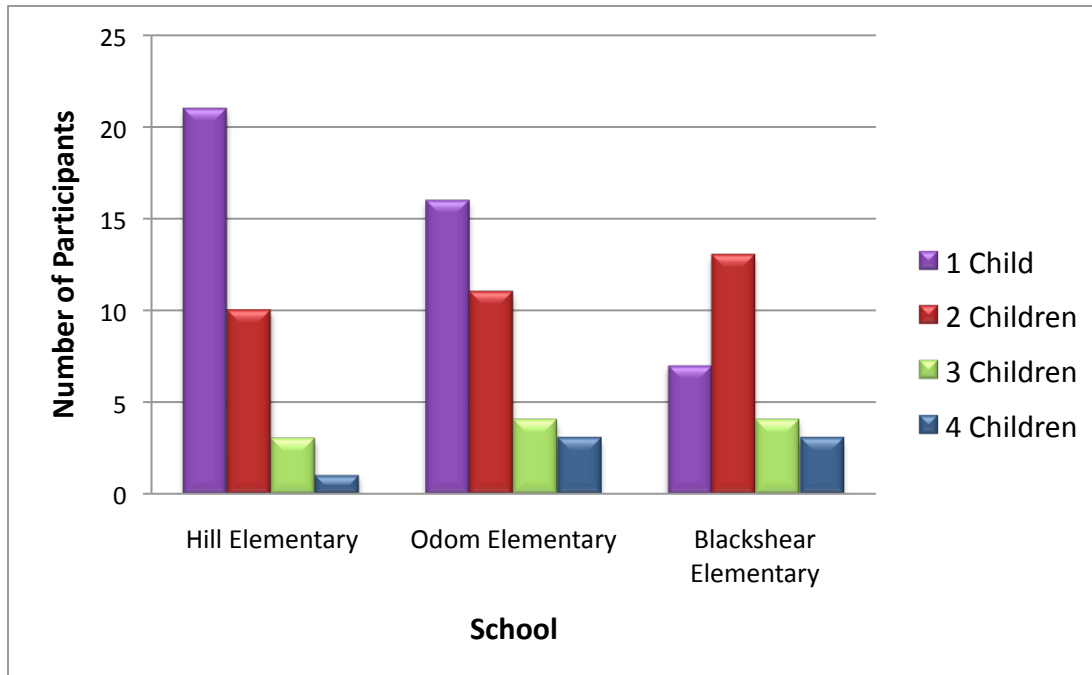


Figure 12: Number of Children in the Household by School

### Children in the Household and Art Activity

The participants, being previously categorized by the amount of art activity listed on the questionnaires, next had their art activity category compared to the number of children residing in their home. This was done to determine if a pattern was found among the data collected from the 96 qualified questionnaires.

The participants who had *no activity* in art making in their homes had, on average, two children residing in the household. The participants who had *high activity* in art making, on average, had 1.6 children residing in their home. The *low activity* and *average activity* participants had a very similar average, varying by only one tenth. *Low*

*activity* participants had an average of 1.8 children, and *average activity* participants had an average of 1.9 children, residing in their home. Figure 13 represents this data.

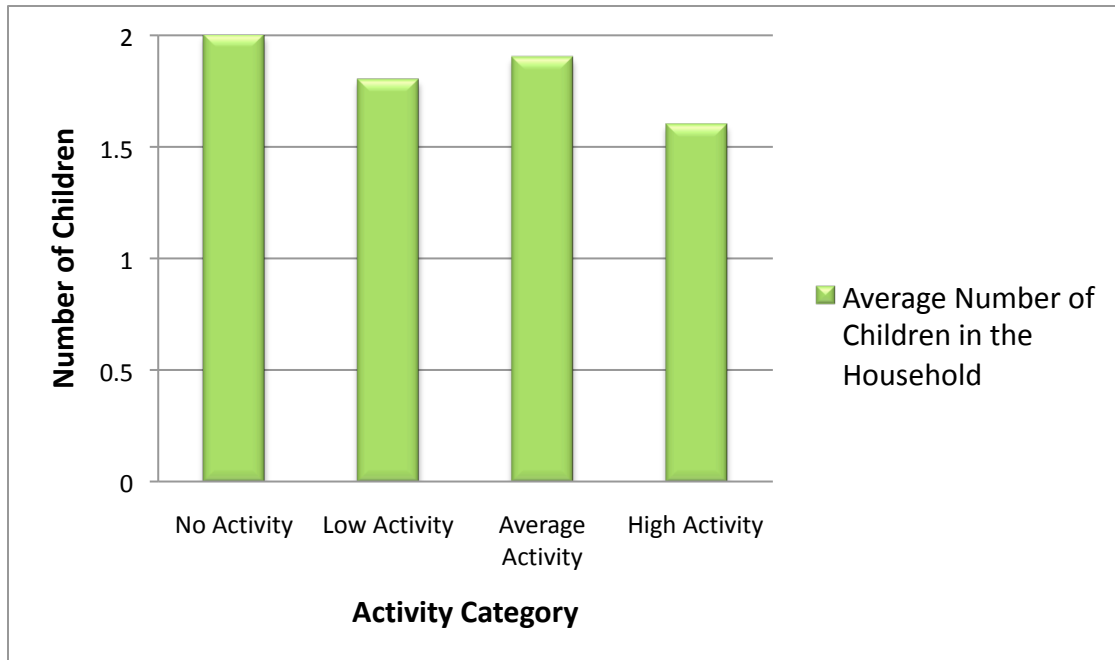


Figure 13: Average Number of Children in the Household

The pattern that emerged from the data stated above supports my hypothesis that the number of children residing in a home affects the amount of art activity taking place in that household. I anticipated results supporting the position that a household with a fewer number of children would participate in more art activities than would a household with a greater number of children. As shown in Figure 13, the participants who were considered as having *high activity* of art in the home had the fewest average number of children. The participants who had *no activity* of art in the home had the greatest average number of children in their household.

### ***Correlative Relationship***

As accomplished previously with the first two variables of education and electronic entertainment devices, 30 questionnaires were chosen at random to be used to determine if a significant correlation was present. The 96 useable questionnaires, regarding the number of children within the household, were given new reference numbers in order to omit those questionnaires that were not useable in this section of the study.

I hypothesized that there would be a negative correlation found between the number children residing in the home and the amount of art activity taking place in the home. A negative correlation would come about, I believed, which was that as one variable is increased, in this instance the number of children residing in the household, the second variable is decreased, the amount of art activities listed in the questionnaires. To record the raw scores of data received from the participants in this study, a table was created with the 30 questionnaires, as shown in Table 10.

Questionnaire Reference Number	Number of Art Activities	Number of children
10	0	3
17	1	2
57	8	2
97	7	2
34	13	1
71	3	1
20	18	1
19	0	3
32	2	2
22	7	2
73	11	3
46	10	1
7	2	1
28	9	1
54	11	1
40	14	1
11	5	2
51	13	1
94	2	2
78	6	2
33	5	1
8	7	1
61	9	1
93	4	1
37	4	2
24	3	1
75	6	3
83	7	1
81	5	2
96	3	4

Table 10: Correlation Table 3

The correlation resulting from the gathered data was  $-.43$ . This negative correlation is of moderate strength, determining the relationship between the variables to be somewhat significant. The negative correlation found in the analysis of the data

supports my hypothesis: the greater number of children residing in the home, the smaller the number of art activities taking place in the home.

### **Summary of Children in the Household Data**

The results gathered by way of the questionnaires and also by the correlation found, support my original hypothesis that there is a significant relationship between the number of children residing in the home and the amount of art activity taking place in the household. As anticipated, there was a visible pattern found within the average number of children in a household and the amount of art activity undertaken by the children in that family. Those participants who have a *high activity* level of art making had, on average, the least number of children. It was also found that those participants who had *no activity* in art in their homes also had, on average, the greatest number of children.

Questionnaire #57, as shown in Illustration 5, lists 13 art activities, and only one child between the ages of 4 and 11. This questionnaire is a strong example of the data generated in this study. However, there were questionnaires that contained unexpected information, such as #96, shown in Illustration 6. This participant is considered to have *high activity* in art in the home, as they included 11 art activities on the questionnaire. However, the respondent also listed having three children residing in the household, which was well above the average of 1.8 children.



1. How many children in each age bracket reside in your home?  
 0-3 yrs old 1 4-7 yrs old 1 8-11 yrs old 1 12-14 yrs old 1

2. What is the highest level of education of the parent(s) or guardian(s)? (please circle one)  
 a. Did not receive High School diploma  
 b. High School diploma  
 c. Some college  
d. College graduate  
 e. Graduate / Professional School  
 f. Doctoral studies

3. Do the children in your house have any kind of art making hobbies? (this can be anything from using glitter and noodles to make cards all the way to doll making or painting) If so please list:  
EVERY ART SUPPLY YOU CAN NAME BUT THE FAVORITES ARE CRAYONS, MARKERS, PAINTS and white sketch pads

4. Does your family ever do art making activities together in the home? (taking photos, scrap booking, crafts) If so please list:  
photo, scrapbooking, card making, crafts, etc.

5. Below is a list of activities please check ones in which your family participates

<input checked="" type="checkbox"/> museum visits	<input checked="" type="checkbox"/> scrap booking	<input checked="" type="checkbox"/> clay sculpting
<input checked="" type="checkbox"/> collage making	<input checked="" type="checkbox"/> holiday card making	<input type="checkbox"/> sewing
<input checked="" type="checkbox"/> crafts fair visits	<input checked="" type="checkbox"/> costume making	<input type="checkbox"/> quilting
<input type="checkbox"/> family tree research	<input checked="" type="checkbox"/> music playing	<input checked="" type="checkbox"/> computer art/animation

Illustration 5: Questionnaire #57

1. How many children in each age bracket reside in your home?  
 0-3 yrs old 1 4-7 yrs old 2 8-11 yrs old 1 12-14 yrs old 1

2. What is the highest level of education of the parent(s) or guardian(s)? (please circle one)  
 a. Did not receive High School diploma  
 b. High School diploma  
c. Some college  
 d. College graduate  
 e. Graduate / Professional School  
 f. Doctoral studies

3. Do the children in your house have any kind of art making hobbies? (this can be anything from using glitter and noodles to make cards all the way to doll making or painting) If so please list:  
Yarn art ex. Gods eyes, Glitter art, leaf art

4. Does your family ever do art making activities together in the home? (taking photos, scrap booking, crafts) If so please list:  
yes, photo making magazine collages

5. Below is a list of activities please check ones in which your family participates

<input checked="" type="checkbox"/> museum visits	<input type="checkbox"/> scrap booking	<input type="checkbox"/> clay sculpting
<input checked="" type="checkbox"/> collage making	<input type="checkbox"/> holiday card making	<input checked="" type="checkbox"/> sewing
<input checked="" type="checkbox"/> crafts fair visits	<input checked="" type="checkbox"/> costume making	<input type="checkbox"/> quilting
<input type="checkbox"/> family tree research	<input checked="" type="checkbox"/> music playing	<input checked="" type="checkbox"/> computer art/animation

Illustration 6: Questionnaire #96

The correlation of  $-.43$  was another determining factor of the relationship found between the number of children and art activity. This negative correlation supports the theory that as the number of children increases, the amount of art activity decreases.

## **Chapter 5: Conclusion**

In the final chapter of this study I reflect on the information and results gained through this investigation. Future study suggestions and possible additions for replication of this study in the future will also be discussed.

### **CONCLUSION OF DATA ANALYSIS**

By means of my own research and the correlation formula, I was able to reach a conclusion regarding the relationship found between the amount of art activities taking place in the households surveyed and the three variables studied in this investigation: (a) the parent's/guardian's education, (b) the amount of electronic entertainment available to the children in the house, (c) the number of children residing in the home.

#### **Art Activity**

Using the data received from the questionnaires, the 120 participants were categorized as having either *no activity*, *low activity*, *average activity*, or *high activity* in regards to the amount art activity their children engaged in. The households surveyed listed an average of six art activities.

The most common art activity listed in the questionnaires was holiday card making. Other common art activities were music/instrument playing, photography, museum visiting, and drawing.

#### **Education**

The respondents were asked to identify the highest level of education present in the household of the parents or guardians. The majority of respondents, 27, received a college degree. 26 of the respondents did not graduate from high school, 21 respondents received a high school diploma, 20 respondents had some college education, 17 respondents held graduate or professional degrees, and 9 respondents were involved with

doctoral studies. The purpose of investigating the parent's/guardian's level of education was to answer the question: Are the children in the home more likely to engage in art activities if their parent's or guardian's had a high level of education?

I hypothesized a pattern would present itself supporting the view that there exists a correlated relationship between the parent's/guardian's level of education and the amount of art activities listed in the questionnaires. Researching the hypothesis that the greater the parent's/guardian's level of education was, the more art activities their children would engage in within their household, I looked to see if a visible pattern emerged from the data. The most apparent relationship was found between those participants categorized as having *no activity* in art and *high activity* in art. 100% of respondents who had *no art activity* were not college graduates. 73% of those with *high activity* were college graduates.

Also, a pattern developed when analyzing the average number of art activities listed in regards to each level of education. Those participants who did not receive a high school diploma listed an average of 3.2 art activities in which their children partake. The participants who were involved in doctoral studies listed an average 7.0 art activities.

My anticipation of a pattern developing concerning the relationship between the number of art activities listed and the parent's/guardian's education was supported through this study. It appeared as though the children of those participants, who had a higher level of education, engage in more art activities. Those participants who had not received a high school diploma or had not completed a college degree did not list their children as being involved with as many art activities.

To further support my theory of this relationship, the survey data was also investigated by use of the correlation formula. As anticipated, a positive correlation of .43 was found, which is considered a moderate correlation. A positive correlation is

present as one variable, the parent's/guardian's education, is increased, the second variable, the number of art activities, is increased as well.

In conclusion, my hypothesis was given support as there is a significant pattern indicating that the parent's/guardian's education is related to the amount of art activity taking place within the household.

### **Electronic Entertainment**

Another variable I predicted would affect art making in the household is the amount of electronic entertainment devices present in the home. If a household owns a large amount of electronic devices used for entertainment purposes, such as televisions and video game consoles, are the children residing in that home less likely to engage in art activity?

From the 120 questionnaires analyzed for this study, the average number of electronic entertainment devices listed was 7.9 per family. All 120 respondents owned at least one television. As accomplished with the amount of art activity taking place in the households, the participants were categorized by the amount of electronic entertainment devices they listed in the questionnaires. Households were categorized as having either a *low*, *average*, or *high* amount of these devices in their home.

This study was undertaken to determine if a significant relationship was present between the amount of electronic entertainment devices present in the home and the number of art activities listed. My hypothesis was that the greater number of these devices found in the home, the less amount of art making would take place.

Of the participants who were considered as having *high activity* in art making, only a small percentage (21%) owned a *high* amount of electronic entertainment devices. The majority of those with *high activity* in art making owned an *average* amount of electronic entertainment devices. It was also determined that those participants

categorized as having *no activity* in art making also owned a *low* amount of electronic entertainment devices. Those participants who were determined to have *average activity* in art making had the greatest number of households owning a *high* amount of electronic entertainment devices.

The pattern I had predicted would occur was not seen through these results. It appeared that the amount of electronic entertainment devices present in a household had no effect on the amount of art activity taking place. However, to further investigate this result a correlative relationship was also studied. The correlation between the number of art activities listed and the number of electronic entertainment devices owned was found to be .042, which is considered to be a very weak to negligible correlative relationship.

In conclusion, there was no pattern found regarding the variable of electronic entertainment devices found in a home and the amount of art making within that home.

### **Children in the Household**

The number of children residing in the household was the third variable investigated in this research. I wanted to answer the question of whether art activities were more prevalent in homes in which only one or two children reside, as opposed to a larger family?

The respondents were asked to identify the number of children in their household between the ages of 4 and 11. It was found that the average number of children residing in each household was 1.8.

In order to determine if a relationship was present between these two variables, the number of children in the home was compared to the number of art activities listed in the questionnaires. I hypothesized that a household in which a fewer number of children resided would engage in more art activity; and a household with a greater number of children would engage in less art activity.

The data illustrated that the participants who had no activity in art making had, on average, two children residing in the home. Those participants who had high activity in art making had, on average, 1.6 children residing in their home. The pattern that emerged from the data corroborates my hypothesis that the number of children residing in a home is tied to the amount of art activity taking place within that household.

As previously achieved, a correlative relationship was also investigated. I hypothesized that a negative correlation would be found. A negative correlation is present as one variable is increased, the number of children residing in the home, the second variable, the amount of art activity, is decreased. The correlation found between these variables was  $-.43$ , which is of moderate strength. The negative correlation found in the analysis of the data supports my hypothesis.

In conclusion, there was a significant relationship found regarding the number of children residing in the household, and the amount of art activity those children are engaged in. A household in which fewer children reside is more likely to participate in more art making activities.

### **SUGGESTIONS FOR REPLICATING THIS STUDY**

Although this investigation did produce successful and significant results, there are certain aspects in which this study could be altered, if it were to be undertaken again. The majority of suggested changes would be in regards to the questionnaire that was employed in this investigation.

As stated previously, when using a questionnaire, there is always a risk that the respondents will not read the question carefully or correctly. In this study, the question needing clarification if the study were to be done again concerns the number of children in the household: How many children in each age bracket reside in your home? 96 of the 120 respondents answered this question correctly by listed the number of children per age

bracket. However, the remaining 24 respondents, instead of giving a number, placed a check mark under the bracket in which their children's age was present. I believe this occurred because of the way the question was stated and also because of the placement of the question, as it was the first question in the survey. The use of brackets might have also played a role in the confusion.

Another item on the questionnaire that I believe could be clarified in the future was the sixth question:

How often does your child/family do art activities?

- a. no art activities
- b. 1-3 art activities a month
- c. 4-6 art activities a month
- d. 7 or more art activities a month

There were several respondents that listed no art activities, yet they chose another answer other than option a. Also, a month is a long period of time to think back on to determine an approximation of art activity. Perhaps a shorter time period, such as a week, would be more effective. Due to the inconsistent answers I received on this question, I did not put as much emphasis in the study as I had anticipated on the frequency of art activity.

An option that would eliminate repeated answers within a questionnaire would be to not provide lines for the respondents to write answers on, but only to provide a longer list of art activities in which the respondents can check all the activities their children participate in. This option might lower the time it takes respondents to answer the entire questionnaire.

## **SUGGESTIONS FOR FUTURE RESEARCH**

When conducting survey research within a large population, as in Austin, Texas, it is only necessary to survey less than 1% to receive accurate results. Therefore, the



same investigation, but on a larger scale, would more than likely contain similar results. However, conducting this research in another city in Texas, or even in another state or county would initiate a comparative investigation. Comparing the results of art activity in the homes in Austin, Texas, to another location, would open a vast amount of research possibilities. For example, if I were to do this study again but in Houston, Texas, would there be many similarities or differences in the results? Houston and Austin, though only located 165 miles apart, are very different cities in many ways.

Also, this research was intended to be non-assumptive, meaning there would be no investigation into the reasons behind the results that were collected. However, there are great opportunities to investigate the results of this research further that would cross into an assumptive research.

Another possibility for future research for teachers would be to use these findings on the type of art activities students engage in at home as motivation for curriculum development. A study could be implemented to discover whether these findings improved engagement within the classroom, and whether children would enjoy working with the same materials in school as they choose to use in their time outside of school.

The most important concept behind this investigation is that children need to make art. Art making improves a child's ability to express themselves, and to find their sense of self. It is a possibility that art making in the public school system will decrease overtime, turning the home into the most likely place a child will engage in art activities.

Furthermore, in this constantly changing world it is likely that we will see more electronic entertainment devices in the future. I believe these questions that were investigated through this survey need to be asked periodically over time, and perhaps followed by subsequent investigations to learn if these findings have held up or have changed overtime. This investigation can be used as a basis for research in the future.

## Appendix A

### Art Learning in the Home Questionnaire

1. How many children in each age bracket reside in your home?  
 0-3 yrs old      4-7 yrs old      8-11 yrs old      12-14 yrs old  
 \_\_\_\_\_
2. What is the highest level of education of the parent(s) or guardian(s)? (please circle one)
  - a. Did not receive High School diploma
  - b. High School diploma
  - c. Some college
  - d. College graduate
  - e. Graduate / Professional School
  - f. Doctoral studies
3. Do the children in your house have any kind of art making hobbies? (this can be anything from using glitter and noodles to make cards all the way to doll making or painting) If so please list: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. Does your family ever do art making activities together in the home? (taking photos, scrap booking, crafts) If so please list: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. Below is a list of activities please check ones in which your family participates
 

__ museum visits	__ scrap booking	__ clay sculpting
__ collage making	__ holiday card making	__ sewing
__ crafts fair visits	__ costume making	__ quilting
__ family tree research	__ music playing	__ computer art/animation

6. How often does your child/family do art activities (please circle one)
  - a. no art activities
  - b. 1-3 art activities a month
  - c. 4-6 art activities a month
  - d. 7 or more art activities a month

7. Please circle **how many** of the following electronic devices are in your home and used for entertainment purposes.

Televisions	1	2	3	4	5	6	7+
Computers	1	2	3	4	5	6	7+
DVD/VCR	1	2	3	4	5	6	7+
Gaming systems (Playstation, Wii)	1	2	3	4	5	6	7+

Please list below any other electronic entertainment devices you have in your home.

---

## Appendix B

### List of Random Numbers Generated

Odem Elementary (164 total, 40 needed)

58 140 150 92 142 75 129 79 16 133 139 143 50 62 43 12 31 53 126 18 117 130 49 52 78  
10 102 96 73 123 160 148 108 120 66 69 84 114 110 23

Random numbers generated Jul 6 2009 at 17:43:19 by [www.psychicscience.org](http://www.psychicscience.org).

Free educational resources for parapsychology, psychical research & mind magic.

Hill Elementary (102 total, 40 needed)

90 34 13 19 71 42 93 63 52 57 66 44 25 18 17 35 77 91 30 98 55 1 94 10 47 75 99 41 9  
29 23 73 48 70 54 72 43 11 86 81

Random numbers generated Jul 6 2009 at 18:50:41 by [www.psychicscience.org](http://www.psychicscience.org).

Free educational resources for parapsychology, psychical research & mind magic.

Correlation of education level and art activity (30 needed)

61 13 98 104 46 105 65 92 35 21 60 52 108 110 66 6 77 17 56 107 115 120 82 63 71 90  
97 51 89 28

Random numbers generated Sep 7 2009 at 17:8:3 by [www.psychicscience.org](http://www.psychicscience.org).

Free educational resources for parapsychology, psychical research & mind magic.

Correlation of art activity and electronic entertainment devices (30 needed)

10 45 28 82 54 113 108 32 112 13 55 43 31 63 30 64 69 19 79 58 8 75 42 6 102 67 16 53  
105 117

Random numbers generated Sep 7 2009 at 17:50:3 by [www.psychicscience.org](http://www.psychicscience.org).

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Correlation of art activity and children residing in household (30 needed)

10 17 57 97 34 71 20 19 32 22 73 46 7 28 54 40 11 51 94 78 33 8 61 93 37 24 75 83 81  
96

Random numbers generated Sep 7 2009 at 18:46:41 by [www.psychicscience.org](http://www.psychicscience.org).

Free educational resources for parapsychology, psychical research & mind magic.

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